

ISSN 0970-4450

# PRANIKEE

Journal of

ZOOLOGICAL SOCIETY OF ORISSA



Volume XVII & XVIII, 1996-97



## GUSTATORY PREFERENCE OF BLACKBUCKS IN BALLIPADAR-BHETANAI WILDLIFE RESERVE JUSTIFYING ITS PEST STATUS AND MANAGEMENT

Rajendra Mohan Panda and K. Bohidar

Dept. of Zoology, Utkal University,  
Bhubaneswar -751004, India

### ABSTRACT

Food preference of the blackbuck, *Antelope cervicapra* Linn., in Ballipadar-Bhetanai area is dependent on the seasonal variability of food plants. During winter, it takes cereals like *Eleusine coracana* (ragi) and *Oryza sativa* (paddy), pulses like *Phaseolus mungo* (moong), *Cajanus cajan*, *Milletia auriculata* and *Lathyrus sativus* (khesari). In summer, several varieties of grasses are preferred and in rainy season although grasses are plentifully available, it prefers *E. coracana*. The highly preferred crops including ragi, paddy and moong could be replaced by nonpreferred crops like Khesari and *Sesamum indicum* (til) to serve as the most effective pest management program.

**Key words:** Gustatory preference, blackbuck, pest status, management.

### INTRODUCTION

A study of food habits of blackbuck indicates that it mainly subsists on short grasses and herbs and when they are scarce, the antelope subsists on supplementary food like leaves of trees and crops (Chattopadhyay and Bhattacharya, 1986). Some information is available on the food habits of the blackbuck through the works of Krishnan, 1972; Roberts, 1977; Ramanarao and Prasad, 1982. Physical injury to crops by blackbucks causes monetary loss (Giles, 1989). The present paper deals with the food habits and feeding preferences of blackbuck, a preliminary study to put blackbuck in the rank of a pest among the herbivorous mammals, attempts to evaluate

damage caused by blackbucks to ragi and other crop plants in Ballipadar-Bhetanai area and suggests some measures to solve the pest problem of the farmers.

### MATERIALS AND METHODS

The Ballipadar-Bhetanai Wildlife Reserve in the district of Ganjam covers an area of 72.80 sq km. It consists of 60-65% cultivated lands, 12-15% rocky elevations, 10-15% man made roads and houses, 5-6% forest cover, 4-5% grassy plains and about 7-8% water tanks. The feeding behaviour of blackbucks was observed through direct visual observation with the help of a 8 x 30 binoculars. The sightings of blackbucks in different habitat types were recorded in different seasons. The availability of grasses, crops and other green vegetation and their consumption by blackbucks were noted. The relative preference for crops was also established from observed data.

### OBSERVATIONS

During Winter the blackbucks were found to take pulses like *Phaseolus mungo*, *Cajanus indicus*, *Milletia auriculata* and *Lathyrus sativus*. The more favourable pulses were *P. mungo* and *C. indicus* which constituted about 28-30% of the total pulse cultivation. They often rested in the cultivated fields of moong, showing higher preference for this crop. However, *L. sativus*, which formed 1 - 2% of the total pulse cultivation was found to be less preferred. The favourable cereals were ragi and paddy. Grasses like *Celosia argentia*, *Cynodon dactylon* and *Cyperus rotundus* also formed favourable food during this period.

Summer was not totally dry when large number of tanks were full of water and the soil was moist due to high rainfall. The non-availability of crops for blackbucks was compensated by grasses like *C. dactylon*, *C. rotundus* and *Panicum frumentaceus* and the leaves of *Mangifera indica*, *Phoenix sylvestris* and *Tridax procumbens*.

During monsoon, fresh vegetation was abundant. In addition to the available grass varieties, *Cammellina benghalensis*, *Andropogon aciculatus*

and sprouts of paddy and ragi crops were taken by the blackbucks with great interest. During this period the blackbucks preferred to graze upon cereals than grasses. Ragi and paddy are greatly favoured for their softness and probably taste. Throughout the year grasses like *Cynodon* spp. and *C. rotundus* were available and consumed by the antelope species.

### DISCUSSION

The food preference for grasses, pulses and cereals in different seasons played an important role in their selection of habitat. However, a good number of cattle population and human activity compelled them to disperse. Their territory depends upon the area of food preference and when they felt insecure they choose its nearby places as their abode and territory. The blackbucks are free to move and raid the whole crop field when left undisturbed. This activity of blackbucks renders a small landholder penniless and affects his socio-religious relationship with the blackbucks (Howard, 1974). The damage to ragi crop was specially observed. The decline in its cultivation was found from 100 to 20 acres during two consecutive years (1994-96).

One way of controlling crop damage is to reduce the number of blackbucks. If the animal number can not be reduced, their movement may be restricted (Hawthorne, 1980). This could be done by enclosing the blackbuck population in a chain link or electric fence.

Most of the crops are susceptible only at certain phenological stages. Extra precaution at such time may reduce damage. Fire-crackers may also be used to discourage the blackbucks from raiding crops but this method is also not very effective as suggested by Roper and Hill (1985). A very effective economic solution would be to encourage farmers to grow less susceptible and locally compatible crops like *L. sativus* and *Sesamum indicum* in place of high susceptible crops like *E. coracana* and *P. mungo* by providing subsidized seeds, fertilisers and the market for the harvested crop Jhala (1993) who prescribed the use of sunflower (*Helianthus* sp.) and Castor (*Ricinus* sp.) in place of susceptible sorghum. The most common protection strategy for the farmers is guarding their fields being vigilant during crop season. But a careful assessment of crop damage and providing



adequate compensation to the poor farmers would be found necessary for a long lasting solution to this burning problem.

#### REFERENCES

- Chattopadhyay, B. and T. Bhattacharya. 1986. Food habits of blackbuck *Antelope cervicapra* Linn. of Ballavpur Wildlife Sanctuary, West Bengal, India. *Trop. Ecol.* 27: 93-100.
- Giles, R.H. Jr. 1989. Wildlife and Integrated Pest Management *Environmental Management*, 4 (5): 373-374.
- Hathorne, D.W. 1980. Wildlife Damage and Control Techniques. In *Wildlife Management Techniques Manual* (Ed. Schemnitz, S.D.) (Washington, DC : Wildlife Society).
- Howard, W.E. 1974. The Biology of Predator control *Addison Wesley Module in Biology* (Reading, MA : Addison Wesley)
- Jhala, Y.V. 1993. Damage to Sorghum crop by blackbuck. *Int. J. Pest Management.* 39 (1) : 23-27.
- Krishnan, M. 1972. An ecological survey of the larger mammals of peninsular India *J. Bombay Nat. Hist. Soc.* 69 (2): 469-501.
- Ramanarao, J.V. and Prasad, N.L.N.S. 1982. *Management and Husbandry of Blackbuck, FAO Regular Programme No. RAPA 53.* pp. 76.
- Roberts, T.J. 1977. Mammals of Pakistan, *Ernest Ben Ltd.*, London and Tonbridge.
- Roper, B.R. and E.P. Hill. 1985. An Evaluation of visual and auditory electronic devices to repel deer. In P.T. Bromley Ed., *Proc. of 2nd Eastern Wildlife Damage Control Conf. (Raleigh, NC : North Carolina State University).* pp. 186-191.